4:30

813-3 Prognostic Significance of Double Product and Inadequate Double Product Response to Maximal Symptom-Limited Exercise Stress Testing After Myocardial Infarction in 6,296 Patients Treated With Thrombolytic Agents

Massimo Villella, Alessandro Villella, Simona Barlera, Amerigo Giordano, MariaGrazia Franzosi, Aldo P. Maggioni, Fabio Turazza, GISSI-2 Investigators. *GISSI Coordinating Centre, ANMCO and M. Negri Institute, Italy*

The Double Product (DP), the product of heart rate and systolic blood pressure at the end of exercise stress testing (ET) allows to estimate the myocardial oxygen uptake.

The aim of the study was to evaluate if this parameter can provide different prognostic information on AMI survivors treated with thrombolytic agents. Of 10,219 patients (pts) randomized in GISSI-2 study discharged alive with confirmed myocardial infarction 6,296 performed maximal symptom-limited ET. In the remaining 3,923 pts ET was not performed for cardiac or non-cardiac contraindications. All the pts were given thrombolytic therapy in the acute phase of MI. The independent prognostic value of the DP was assessed by Cox model in the 6,251 pts (99.3%) for whom 6 month mortality and reinfarction data were available. The distribution of DP was evaluated according to the receiver operator characteristic (ROC) analysis to choose the best discriminating value. The value of DP with the highest sensitivity and specificity was 21,700. The DP was higher than 21,700 in 3,944 pts (63%) (Group 1); equal or inferior to 21,700 in 2,283 pts (36%) (Group 2); unknown in 24 pts due to missing data.

Results on 6-month mortality are reported in the table.

	Group 1	Group 2	RRCox	95% CI
Mortality %	0.8	2.0	2.00	1.26–3.18

In conclusion a poor DP response to maximal ET is an independent predictor of 6-month mortality in survivors of MI treated with thrombolytic agents.

4:45

813-4 Exercise Testing for Rapid Triage of Emergency Room Patients With Chest Pain

Howard K. Newhouse, David G. DiMattia, Mark A. Menegus, Ronald H. Wharton. *Montefiore Medical Center, Bronx, NY*

Rapid and cost-efficient evaluation of patients presenting to the emergency room (ER) with chest pain (CP) is important. A protocol was established for immediate maximal exercise stress (EX) testing of pts without ECG evidence of acute ischemia, at the discretion of the ER physician. Pts with known CAD, age > 65, or uninterpretable EX ECG due to LVH, BBB, or Digoxin were excluded. Telephone follow-up was performed at 6 months.

56 pts underwent EX test < 24 hrs after ER arrival. Mean age was 46, and 55% were female. CP was 5% typical, 32% atypical, and 63% non-anginal. An adequate test endpoint was achieved in 95% (mean 9 METS, 92% PMHR). Horizontal ST depression ≥ 1 mm occurred in 3 pts (5%). There were no complications from testing.

Follow-up was available in 96%. Two of 3 pts with positive EX ECG were admitted and had angiographic CAD. All pts with a normal EX ECG were discharged from the ER; none had death, MI, or documented CAD at follow-up. Of pts with normal EX ECG, 37% continued to report CP, including 10% with recurrent ER visits.

In conclusion, early EX testing is safe and effective for the triage of pts presenting to the ER with chest pain. Despite negative tests and a benign prognosis, persistent symptoms and recurrent ER visits were frequent suggesting that further evaluation and treatment after ER discharge is important.

814 Variations in Cardiovascular Care: Implications on Costs and Appropriateness

Wednesday, March 27, 1996, 4:00 p.m.–5:00 p.m.
Orange County Convention Center, Room 224C

4:00

814-1 Regional Variations in Treatment Costs and Resource Utilization for Uncomplicated Acute Myocardial Infarction (UMI)

Eric L. Eisenstein, L. Kristin Newby, J. David Knight, Leslee J. Shaw, Robert M. Califf, Eric J. Topol, Daniel B. Mark. *Duke University Medical Center, Durham, NC*

Previous analysis of GUSTO-I data found regional variation in cardiac procedure use despite similarities in disease characteristics. We used the 22,043 GUSTO-I patients for whom we had resource utilization data and a set of validated clinical criteria to identify UMI patients by region and to compute their hospital and physician costs. We found differences in UMI rates (range 46%–59%) and in the use of resources (room and procedure). The New England and Pacific regions had similar total costs for UMI but had significant differences in mean length of stay (LOS, 9.1 vs. 7.5 days) and in percent of total costs that were procedures (% Proc, 22% vs. 32%).

Region	% UMI	Complicated		Uncomplicated		
		LOS	Cost	LOS	Cost	% Proc
New Engl	52	11.3	23,226	9.1	13,877	22
Mid Atlantic	53	11.9	25,971	10.4	17,383	26
S Atlantic	54	10.7	24,735	8.8	16,288	35
EN Central	52	10.5	24,962	9.0	16,663	33
S Central	59	10.8	26,346	8.6	15,798	36
WN Central	46	9.8	24,423	8.1	15,089	32
Mountain	52	9.5	24,017	7.9	15,180	35
Pacific	58	8.9	21,743	7.5	13,748	32

Conclusion. Regional differences in resource use for UMI suggest the potential for significant cost savings through case management.

4:15

814-2 British Interventionists but Not General Cardiologists Mirror US Practice: Application of the University of Maryland Revascularisation Appropriateness Scoring System at the UK National Cardiac Centre

Rodney H. Stables. *The Royal Brompton Hospital, London, England*

There has been much interest in the development of scoring systems to evaluate the appropriateness of coronary revascularisation by PTCA and CABG. The University of Maryland RAS system has proven a practical tool for this purpose and, when compared to the more complex RAND expert panel ratings and ACC/AHA guidelines, was the only index to predict clinical outcome. At the UK national centre we have examined the allocation of patients with single vessel coronary disease (SVD) to PTCA or medical therapy and demonstrated that, in a cohort prospectively identified from a consecutive series of 2000 diagnostic catheter procedures, interventional cardiologists (I) were more than twice as likely to recommend PTCA than their non-invasive colleagues (N). No patients were allocated to CABG. Cardiologist disposition was a powerful and independent predictor of treatment allocation. The RAS methodology was applied to examine this variation in practice.

Conclusions: The RAS system can be applied in a UK setting. In the management of SVD, British interventionists practice in line with its recommendations and there is little evidence that they are performing significant numbers of inappropriate procedures. In contrast it appears that general cardiologists fail to recommend PTCA in a significant proportion (46%) of patients when the RAS suggests that revascularisation is indicated.

% of all patients when PTCA is:	I	N
Not Indicated and Not Performed	26%	24%
Not Indicated and Performed	10%	2%
Indicated and Not Performed	0%	46%
Indicated and Performed	64%	28%